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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,716	04/16/2007	James Edward Delves	DPS-030810 PET-1015US	2244

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EXAMINER	
VANDEUSEN, CHRISTOPHER	
ART UNIT	PAPER NUMBER
1774	

MAIL DATE	DELIVERY MODE
11/01/2011	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/573,716	DELVES ET AL.	
	Examiner	Art Unit	
	CHRISTOPHER VANDEUSEN	1774	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 October 2011*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

5)☒ Claim(s) *1-12* is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6)☐ Claim(s) _____ is/are allowed.

7)☒ Claim(s) *1-12* is/are rejected.

8)☐ Claim(s) _____ is/are objected to.

9)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

12)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.

3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-12 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Johannes, US Patent 4053142 (already of record).

Regarding claim 1, Johannes '142 teaches an apparatus for enhancing solubility of a solute in a solvent (abstract; col. 1, line 64 – col. 2, line 13), the apparatus comprising a solvent and/or solute inlet (18 of figure 1; col. 2, lines 54-68) having a fluidizing unit provided with only a single series of tangential slots which creates one vortex of rotating flow in the solute and/or solvent (16 of figure 1; col. 2, lines 1-4 and 41-46 teach a rotational flow of the first fluid) between the fluidizing unit and a discharge pipe (in mixing chamber 10 of figures 1-2; col. 2, lines 41-46).

As currently amended, claim 1 recites a unit "provided with only a single series of tangential sots which creates one vortex of rotating flow in the solvent and/or solute".

The apparatus of Johannes '142 teaches an apparatus with two series of tangential slots, each of which creates one vortex of rotating flow in a solvent or solute (col. 1, line 64 - col. 2, line 13). As such, either set of ports (16 or 22 of Johannes '142) is considered by the examiner to constitute only a single series of tangential slots which creates one vortex of rotating flow in the solvent or solute, as the creation of either vortex requires only one set of ports.

However, should applicant disagree with this interpretation, the examiner cites MPEP § 2144.04(II)A, which teaches that the omission of an element and its function is obvious if the function of the element is not desired. As such, it would be obvious to omit either of the sets of inlet ports (16 or 22 of Johannes '142) if their function was not desired.

Therefore it would have been obvious to one having ordinary skill in the art at the time of invention to have further provided an apparatus wherein the fluidizing unit had only a single series of tangential slots in the apparatus of Johannes '142, if not anticipated thereby, in order to remove a component whose function was not desired.

7. Regarding claim 2, Johannes '142 teaches an apparatus of claim 1, as applied above.

Johannes '142 further teaches an apparatus in which a fluid interfacial or boundary layer exists within the vortex where enhanced mass transfer, or dissolution of solute into the solvent takes place (abstract; col. 1, line 64 – col. 2, line 13 teach that this is a feature of the invention when the second component is added).

In the alternate rejection under 35 USC 103 used to reject claim 1 above, the solute and solvent would be delivered in a single inlet tube, as the delivery components of the

second component would be omitted as per the rejection cited above. This would create an apparatus in which a fluid interfacial or boundary layer exists within the vortex where enhanced mass transfer or dissolution of solute into the solvent takes place (the vortex created by either set of inlet ports would disrupt the flow of the mixture delivered by the inlet, which would have enhanced the mass transfer between the mixed components).

8. Claims 3 and 5-10 do not further limit the structure of the apparatus, but rather recite contents of the apparatus during use. “Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim.” See MPEP § 2115. As such, these limitations need not be addressed by the prior art, and the prior art cited in the rejection of claim 1 above is considered to reject claims 3 and 5-10.

9. Claim 4 at lines 1-2 recites that "means are provided to achieve at least two different stages of leaching". The Applicant's specification supports and illustrates in Figure 5 the means comprising several fluidizing units in succession for how the (see Applicant's specification; pg 16, lines 12-21). Accordingly, this means-plus-function language invokes a 35 U.S.C. 112, sixth paragraph limitation (see MPEP § 2181).

The limitation in line 2 of claim 4 that the means achieve "leaching" is based on the limitation in claim 3 that the apparatus be used for leaching. As noted above, this constitutes an intended use of the apparatus and needs not be addressed by the prior art. As such, the structural limitation recited in claim 4 need only be addressed by the prior art to the extended that the prior art provides a structure capable of such use.

The limitation in lines 2-3 of claim 4 that the means be "targeted at different solutes to

be dissolved in different solvents" does not further limit the structure of the apparatus, but rather recites contents of the apparatus during use. “Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim.” See MPEP § 2115. As such, this limitation needs not be addressed by the prior art.

Regarding claim 4, Johannes ‘142 teaches an apparatus of claim 1, as applied above.

Johannes ‘142 further teaches an apparatus further comprising means are provided to achieve at least two stages of fluidization (col. 3, lines 1-9).

10. Regarding claim 11, Johannes ‘142 teaches an apparatus of claim 1, as applied above.

Johannes ‘142 further teaches an apparatus in which the fluidizing unit operates on a continuous flow of solvent or solute (abstract teaches that components are “continuously discharged”).

11. Regarding claim 12, Johannes ‘142 teaches an apparatus of claim 1, as applied above.

Johannes ‘142 further teaches an apparatus further comprising a flow chamber having a fluid inlet (18 of figure 2; col. 2, lines 54-68) and a fluid outlet (26 of figure 2; col. 2, lines 54-68) and at least one tangential slot (12 of figure 2; col. 2, lines 54-68).

Response to Arguments

12. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER VANDEUSEN whose telephone number is (571)270-5020. The examiner can normally be reached on Monday - Friday, 8:30 AM - 6 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Walter Griffin can be reached on (571) 272-1447. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ckv/

/Walter D. Griffin/
Supervisory Patent Examiner, Art Unit 1774